## SPECIFICATION AMENDMENTS

Please replace the paragraph beginning on page 4, line 1, with the following rewritten paragraph:

Figure 5 is an illustration of mapping downlink messages carried by PDUs into PHY elements ~~the Downlink mapping of messages from PHY elements to PDUs~~ in one embodiment.

Please replace the paragraph beginning on page 4, line 3, with the following rewritten paragraph:

Figure 6 is an illustration of mapping uplink ~~the Uplink mapping of~~ messages from PDUs to PHY elements in one embodiment.

Please replace the paragraph beginning on page 11, line 8, with the following rewritten paragraph:

Figure 5 is an illustration of mapping downlink messages carried by PDUs into PHY elements ~~the downlink mapping of messages from PHY elements to PDUs~~ in one embodiment. Fig. 5 shows one example of a TDD downlink subframe 300 that can be used by the base station 12 to transmit information to the plurality of nodes 16. The downlink mapping illustrated in Fig. 5 can be performed by the communications processor in the base station, and is performed to map PDUs of varying lengths to the PSs utilized by a wireless communications system as described above with reference to Fig. 4. As mentioned previously, in a TDD system, each time frame is divided into a downlink subframe and an uplink subframe. More specifically, during

each frame (or other predetermined period), the downlink subframe is first transmitted from the base station 12 to all nodes 16 in the sector 14, after which the uplink subframe is received by the base station 12 from particular nodes 16. The downlink subframe 300 may be dynamic, such that it may be different in sequential time frames depending on, among other things, an uplink/downlink split determined by the communications processor 20. In an FDD system, the time frame is not divided between uplink and downlink data. Instead, an FDD downlink subframe is an entire frame of downlink data on a first channel, and an uplink subframe is an entire frame of uplink data on a second channel. In a typical FDD system, the downlink subframe and uplink subframe may be transmitted simultaneously during the same predetermined period. Thus, in an FDD system both the base station 12 and the nodes 16 may receive and transmit at the same time, using different channels. In another embodiment, the downlink subframe and uplink subframe may not be transmitted at the same time, but still use different channels.

Please replace the paragraph beginning on page 12, line 15, with the following rewritten paragraph:

Fig. 6 also shows the mapping of the scheduled portion of the uplink subframe 400. Within the subframe 400, the TC/PHY packets 600 ~~packets 700~~ can be grouped by nodes. All transmissions from an individual node 16, other than bandwidth requests transmitted in bandwidth request contention slots, may be transmitted using the same modulation scheme. In one embodiment, each node's transmission is packed and fragmented to be an integer multiple of

a TDUs 600 to provide an integer multiple of PIs 620 after coding. In an alternative embodiment, if the bandwidth requested for pending uplink data does not require the entire last TDU, the bandwidth may be allocated such that the last TDU is shortened, resulting in a shortened PI. Again, this variability of the length of the last TDU and PI are illustrated by the dashed lines in the last TDU and PI in Fig. 6; and the length of the last TDU and PI may be any length shorter than, or including, their respective full ordinary lengths. The uplink and downlink mapping provides a mechanism for the higher communications protocol layers to transport data to the PHY layer.

Please replace the paragraph beginning on page 14, line 4, with the following rewritten paragraph:

Figure 6 is an illustration of <u>mapping uplink messages</u> ~~the uplink mapping of messages~~ from PDUs to PHY elements in one embodiment. The uplink of data from upper layers to the PHY layer may occur in the communications processors of the various nodes served by each base station. Fig. 6 shows an example of an uplink subframe 400 that may be adapted for use with the data transportation and synchronization process. The nodes 16 use the uplink subframe 400 to transmit information (including, for example, bandwidth requests) to their associated base stations. There may be three or more main classes of control messages that are transmitted by the nodes during the uplink subframe 400. Examples include: (1) those that are transmitted in contention slots reserved for node registration (Registration Contention Slots); (2) those that are transmitted in contention slots reserved for responses to multicast and broadcast polls for

bandwidth allocation (Bandwidth Request Contention Slots); and (3) those that are transmitted in bandwidth specifically allocated to individual nodes (node Scheduled Data Slots).

Please replace the paragraph beginning on page 17, line 15, with the following rewritten paragraph:

Figure 8 is an illustration representing an exemplary PDU and illustrating the various fields the PDU header might have. Fig. 8 shows the format of one downlink PDU 800. Although specific fields, field lengths, and field configurations are described with reference to Fig. 8, those skilled in the communications art shall recognize that alternative configurations may be used including additional or fewer fields. In several embodiments, the communications processors of both the base station and the nodes create PDU payloads and PDU headers to be transmitted and retrieve SDUs from received PDUs. An exemplary downlink PDU format 800 may include a standard downlink PDU header 810 and a variable length PDU payload 820. The downlink PDU header 810 of one embodiment comprises 13 different fields that measure 7 bytes in total length. The downlink PDU header 810 illustrated in Fig. 8 begins with an encryption control (EC) field. In certain embodiments, the EC field is set to a logical zero if the payload is encrypted; and it is set to a logical one if the payload is not encrypted. The EC field is followed by an encryption key sequence (EKS) field that provides information about the encryption used, if encryption is utilized. A reserved field (Rsvd) may follow the EKS field. The Rsvd field provides for future expansion of the PDU header fields. The Rsvd field is followed by a length field (Length). The Length field indicates the length of the PDU header and any data <u>that</u> may

be contained in the PDU payload. The Connection Identifier field follows the Length field and provides identification information to the base station and the nodes. The Connection Identifier field identifies the destination to which each PDU is to be delivered.

Please replace the paragraph beginning on page 19, line 3, with the following rewritten paragraph:

A CRC indicator field (CI) follows the FC and FSN fields to indicate whether or not CRC is appended to the payload. A packet discard eligibility field (PDE) can also be used and may provide information regarding the payload in a situation where there is congestion. In a congestion situation the wireless communications system may first discard packets indicating discard eligibility. A reserved field follows the PDE field. The reserved field may provide means for future expansion of system functions. In some embodiments packing subheaders may be used to store some header information in the payload as well; and any of the header information may be stored in the packing subheaders. In embodiments utilizing packing subheaders, one of the reserved bits would be utilized to indicate ~~the~~ whether or not packing subheaders are present. Such a bit might be called a packing subheader present field (PSP). Packing subheaders can be of various lengths and describe the length of the individual SDU or fragment payloads that follow each packing subheader. Alternative downlink PDU formats may be similar to the downlink PDU format 800 illustrated in Fig. 8 with minor deviations for differing characteristics.

Please replace the paragraph beginning on page 23, line 15, with the following rewritten paragraph:

An adaptive burst profile management module 1080 and an ATDD management module 1060 are used to control the ratio of uplink to downlink slots in each frame 200 ~~frame 202~~ and provide control information to the BPFP module 935 to assist its bandwidth allocation functions. A node state management module 1040 stores and utilizes information about each node to provide input into numerous control functions, such as bandwidth allocation, QoS protocol, transmission signal optimization, connection identification, and many others. As mentioned before, these exemplary controls may be utilized in embodiments practicing the current invention, but many other functions may also exist and are not mentioned here.